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# The Canadian Arctic: A Handbook

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# **The Canadian Arctic: A Handbook**

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**The Canadian Arctic:  
A Handbook**

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**Introduction**

*Information available  
as of 15 June 1983  
was used in this report.*

For more than two decades, Ottawa has pursued an Arctic policy designed to enhance Canadian sovereignty and promote economic development in the region. This policy has been unilateralist and has resulted in some international friction, particularly with the United States; we believe, however, that it will be maintained. The government of Prime Minister Trudeau has been effective in tapping the sense of "northern identity" which historically has been a strong ingredient of Canadian nationalism. This almost universal popular identification with the "North" has permitted the Canadian Government—whether under control of the Liberal or Progressive Conservative Party—to formulate and implement an Arctic program without any substantial concern that it might provoke domestic political or popular opposition.

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Because they have never been formally proclaimed or precisely defined, Ottawa perceives that its Arctic sovereignty claims are open to question—most importantly, those involving control of water areas. The United States, in particular, disputes Canada's claim to control navigation in the Northwest Passage. While we do not expect Ottawa to expand or make a formal and comprehensive declaration of the extent of its sovereignty claims in the Arctic, it probably will attempt to develop the means—both military and nonmilitary—with which to enforce the jurisdictional controls it has established in the region. For instance, the Canadian Government, without reducing its commitment to NATO, probably will increase its emphasis on the protection of its sovereign interests and, to a somewhat lesser extent, the defense of the North American continent through NORAD and other bilateral Canada–United States agencies. It is likely to consider increasing the northern commitment of its armed forces as a step toward establishing an effective occupancy of the region, improving its surveillance and control capabilities, and providing greater assistance to civil authorities.

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Ottawa's active interest in more clearly delineating its sovereign claims in the Arctic region is primarily due to the region's abundance of petroleum, natural gas, and coal. At the end of 1982, for example, the Canadian Government said that proven recoverable reserves in the area amounted to 1.1 billion barrels of oil and 24.3 trillion cubic feet of natural gas. These resources primarily are for domestic use, but some of the natural gas to be produced in the High Arctic islands tentatively has been earmarked for export to West Germany and France.

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To protect and develop these resources, the National Energy Program (NEP), a federal energy policy designed to promote and subsidize the discovery, development, and production of energy resources throughout Canada, has been in place since the fall of 1980. The guidelines established by the NEP, together with their exacting application by the Canadian Oil and Gas Lands Administration (COGLA), have provided for increased Canadian ownership of and majority participation in the energy development projects undertaken by the private sector. Ottawa thereby has gained control over the pace and scope of development, promoted the growth of Arctic exploration and transportation technologies to the point where Canada now leads the United States and the Soviet Union in the field, and has created the basis for a northern industrial infrastructure.

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In our judgment, Ottawa will seek to exercise effective control over northern development by maintaining a dominant grip over the operations of the territorial governments and retaining complete ownership of the region's land and mineral rights. The ability to govern more or less by fiat in the region is an essential feature of its development plan. We expect Ottawa to continue reducing the number of federal departments involved in the north and concentrate authority in those—such as the Department of Indian Affairs and Northern Development, Energy, Mines and Resources, and the Department of National Defense—that are best able to implement the economic and energy development plans of the federal government.

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The aspirations and demands of Canada's northern population—nonnatives and native peoples—introduce a potentially disrupting influence to Ottawa's Arctic development plans. Trudeau's government, which has prided itself on protecting and not assimilating domestic minority groups, is now confronted by a northern population that is largely opposed to a central feature of its Arctic policy—the megaproject approach to the development of the area's energy resources. Ottawa has been attentive to the northerners' environmental objections and political demands but will be unwilling to satisfy them entirely. Environmental objections will in all likelihood receive cyclical treatment as they have in the past: when world oil prices are low and the supply plentiful, Ottawa will be more willing to listen to the concerns and suggestions of environmentalists than when prices are high and the supply only adequate.

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## Sovereignty

For most of the 20th century, Canada's sovereign claims in the Arctic were not challenged. The area was virtually inaccessible and its resources were unknown, unreachable, or unneeded. As a result, Ottawa took no action to solidify its claims, even though there probably would have been little international opposition. As the scarcity of world fuel reserves became increasingly apparent by the late 1960s, and the existence and location of Arctic resources (figure 1) became better known, the Canadian Government clearly grew uneasy over the ambiguous nature of all of its claims in the Arctic, even though the only serious threat to Canadian sovereignty was a potential US challenge over navigational rights in the Northwest Passage. Since 1969, for example, Ottawa has sought to strengthen its legal position in the Arctic by making enlarged jurisdictional claims over such areas as fisheries and pollution control, directly investing in the exploration for and exploitation of oil and natural gas resources, increasing the military's role and presence in the region, and attempting to improve communication facilities and systems in the north. It has also sought to formulate Arctic policies with a nationalistic slant to create public interest in and enthusiasm for the development of the "last frontier."

### History

In September 1880 Great Britain transferred its claims to ownership of the Arctic islands to the Government of Canada, thereby completing—except for the addition of Newfoundland in 1949—the geographical composition of the nation that had begun with Confederation in 1867 (figure 3). While Ottawa has never officially said its claims in the Arctic rest on the sector theory, its actions and pronouncements suggest that this concept is the basis for its claims of sovereignty. This theory maintains, in short, that each state with a continental Arctic coastline automatically falls heir to all of the island and water areas lying between that coastline and the North Pole. In the Canadian Arctic this area is bounded on the west by

the 141st meridian and on the east by the 60th meridian (figure 6). As early as 1907, the Canadian Senate indicated that Canada's Arctic land claims were loosely based on the theory, but the government has not since invoked it in regard to ice and water areas in the Arctic Ocean proper.<sup>1</sup> The Arctic areas that Canada's armed forces are assigned to protect appear to be based on the sector theory. In military orders, both endlines of the sector are mentioned and are described as extending to the "geographical North Pole."

A major challenge to Canadian sovereignty in the Arctic came with the transit of the Humble-owned oil tanker S. S. Manhattan through the Northwest Passage (figure 5) in 1969, without either prior request for Ottawa's permission or a public recognition of Canadian territorial claims by Washington. Ottawa and, according to public opinion polls, the Canadian public feared that the Arctic was on the verge of becoming North American without ever really having been Canadian. The United States, together with France and the USSR, maintained that the Northwest Passage was an international strait and that any ship could make an innocent passage through it without prior notification. Both Canadian media and politicians, however, quickly identified the journey of the Manhattan as a test of "Canada's resolve to hold on to its birthright."

In addition to the voyage's challenge of Canada's sovereignty in the region, Trudeau and parliamentarians representing Canada's three major political parties expressed concern that an international strait in

<sup>1</sup> Of the six littoral states (figure 4), only the Soviet Union has consistently based its sovereignty claims in the Arctic on the sector theory, doing so since 1926. Soviet and Canadian Arctic policies are similar in several respects: both have claimed 12-mile territorial seas; both have implemented stringent antipollution measures; both claim control over navigation in their respective Arctic waterways; and both take a basically unilateralist approach to formulating and implementing policy in their Arctic regions.

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*Terms and Definitions* (6,7,8)

*Baselines. Those lines along a country's coast from which the width of its territorial sea is measured. Normal baselines are drawn at the low-water mark and therefore follow the curvature of the coast.*

*Straight baselines are employed when a country's coast is frequently indented or fringed with islands, as in the case of the west coast of Norway. Straight baselines are formed by drawing lines to connect the headlands of coastal indentations or the seaward-most points of coastal islands.* [ ]

*Closing Lines. Straight baselines drawn across the mouth of a bay or other coastal indentation. Waters enclosed by these lines become a state's internal waters.* [ ]

*High Seas. Those parts of the sea not included in the Exclusive Economic Zone (EEZ), territorial seas, or internal waters of a state. On the high seas all states may exercise freedom of navigation and overflight.*

[ ]  
*Innocent Passage. The right of foreign vessels to traverse the territorial waters of another state without capricious interference by the coastal state. Passage is considered innocent if it does not prejudice the peace, good order, or security of the coastal state.*

[ ]  
*Internal Waters. Those parts of the sea lying to the land side of straight baselines used to determine the*

*breadth of the territorial seas. In internal waters, the coastal state exercises the same authority it does on land.* [ ]

*International Strait. A narrow waterway used for international navigation between one area of the high seas or an EEZ and another area of the high seas or EEZ. According to the Convention on the Law of the Sea, all ships, submarines, and aircraft have the right of unimpeded passage through such straits.* [ ]

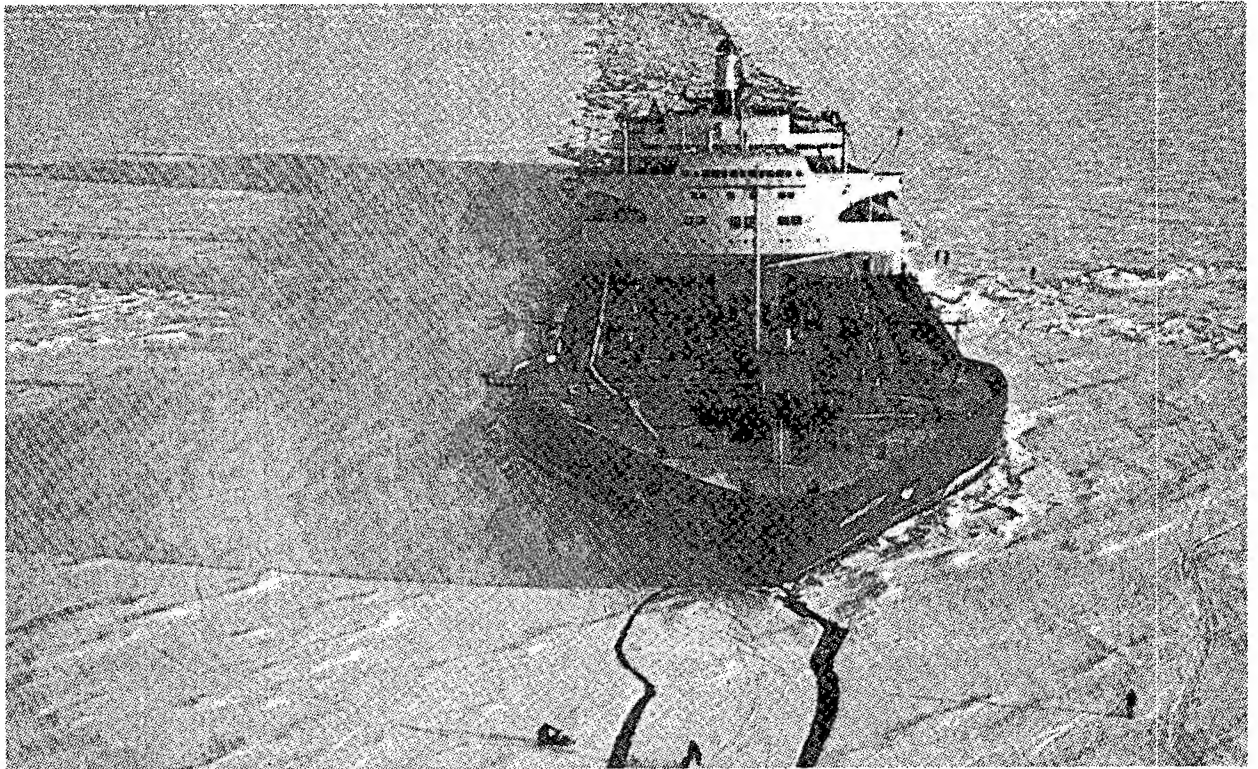
*Sector Theory. The assertion that each state with a continental Arctic coastline automatically falls heir to all of the islands and ice and water areas lying between that coastline and the North Pole. The area within the sector is enclosed by longitudinal lines drawn from the easternmost and westernmost extremities of the Arctic coastline to the North Pole.*

[ ]  
*Territorial Waters. Coastal waters of a country extending up to 12 nautical miles seaward from the low-water line or the straight baseline drawn where a coast is deeply indented or fringed with islands. The country's sovereignty extends to these waters, the overlying airspace, and underlying seabed and subsoil. All foreign ships enjoy the right of innocent passage through territorial waters.* [ ]

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the Arctic would cut the Canadian Arctic archipelago in two, greatly increase the risk of pollution, and give foreign economic interests relatively easy access to the mineral-rich Canadian Arctic seabed. Canada's Department of External Affairs contended that (a) the Northwest Passage has never been used as an international strait in the past and that it is unreasonable for the United States or any other power to assume that Canada will so classify it now, and (b) passage into Canadian Arctic waters cannot be automatically classified as innocent because of the danger of navigating in ice-filled waters. [ ]

The controversy over transit rights through the Northwest Passage was the major issue that focused Canadian attention on the polar region. In response to the Manhattan's voyage, Trudeau announced in May 1969 that henceforth, a "core objective" of Canadian foreign policy would be to implement measures to protect and strengthen national sovereignty claims over the waters and islands of the Canadian Arctic



US icebreaker-tanker Manhattan in Canada's Northwest Passage

### ***The Northwest Passage***

*The Northwest Passage (figure 5) is not a single strait but rather a series of waterways providing a link between two parts of the high seas. It can be simply described as any navigable route through the Canadian Arctic islands, either from east to west or from west to east. Generally speaking there are four possible routes; the first route mentioned here is generally considered to be the least difficult and dangerous:*

- *Davis Strait to Lancaster Sound to Melville Island to Prince Wales Strait to the Beaufort Sea.*
- *The same route as above but exit via M'Clure Strait to the Beaufort Sea.*
- *Davis Strait to Lancaster Sound to Barrow Strait to M'Clintock Channel to Coronation Gulf to Amundsen Gulf to the Beaufort Sea.*
- *Hudson Strait to Foxe Basin to the Gulf of Boothia to Barrow Strait to Melville Sound.*

archipelago. His declaration was one step short of claiming the sector theory as the basis for Canadian sovereignty claims in the Arctic—he talked about the land masses in the sector but not water and ice areas in the Arctic Ocean.

### **Current Policy**

In order to avoid a confrontation with the United States, Trudeau's government began in the early 1970s to construct a northern policy designed to extend Canadian sovereignty through the use of pollution, environmental, and other jurisdictional controls rather than a formal declaration of sovereignty. Underlying this approach was Ottawa's assumption that the United States could not in the long run successfully press for policies that ran counter to the security, economic, and environmental interests of the coastal states.

this policy of incremental accretions to Canadian

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jurisdiction in Arctic waters also is likely, the longer it is in place, to have the effect of "creeping" international acceptance.<sup>2</sup> [redacted]

Ottawa's first sovereignty-enhancing measure in the Arctic was a cabinet decision in 1970 extending all Canadian territorial waters from 3 to 12 nautical miles. The practical effect was to bring the Barrow Strait at the "eastern gateway" to the Northwest Passage under Canadian jurisdiction. When this area of control was coupled with a similarly controlled "western gateway" through the Prince of Wales Strait, which had existed under the former 3-mile limit, Canada could exert some measure of control over navigation in its Arctic archipelago (figure 5). [redacted]

In addition to the evolving international consensus supporting the establishment of territorial seas of up to 12 nautical miles in breadth, Canada also had an argument for the international recognition of its claims for control over the gateway areas because both "gateways" are less than 24 miles wide at their narrowest points and therefore were overlapped by Canada's 12-nautical mile territorial sea claim. The significance of the extension to 12 nautical miles was, from Ottawa's viewpoint, its elimination of any further possibility that the Northwest Passage would be considered a continuous strip of high seas, since navigation of the Barrow Strait between Lowther and Young Islands necessarily involves transit through Canadian territorial waters. The United States quickly announced its refusal to recognize the Canadian

<sup>2</sup> Other such "creeping" efforts to extend national jurisdiction in the Arctic occurred in January and March 1977 when Ottawa created, respectively, a 200-mile Exclusive Economic Zone (EEZ) off all Canadian coastlines and a 200-mile exclusive fishery zone in the Arctic EEZ. The establishment of the EEZ (see figure 6 for borders of Canada's Arctic EEZ) in Arctic waters introduces another complicating factor to Ottawa's sovereignty claims in the region. A line delimiting the EEZ in the Arctic will follow the contour of the Canadian Archipelago in linking the offshore boundaries to the east and to the west. The question arising from such a delineating exercise is what happens to the status of those seas that lie within the area defined by the Canadian "sector" but are beyond the EEZ. The effect of drawing the EEZ boundary will be to create a justifiable but wobbly line demarcating an irregular area notably smaller than that of the sector claim. To insist upon the validity of the EEZ claim would be tantamount to accepting a permanent deviation from the sector principle. So far Ottawa has not been forced to choose between the two claims, and the creation of the EEZ now stands simply as another extension of Canadian jurisdiction in Arctic waters. [redacted]

extension to 12 nautical miles, treating it as merely a new chapter in the old story of gradual encroachments by coastal states on the freedom of the high seas. [redacted]

Ottawa next amended—also in 1970—its Territorial Seas and Fishing Zones Act to draw closing lines at the entrances of major bodies of water for fishery conservation and antipollution purposes. The Act drew those lines across the entrances to five major bodies of water and thereby placed 80,000 square miles of coastal waters within Canadian internal waters jurisdiction. This legislation was followed by the Canadian Shipping Act of 1970 which placed strict antipollution standards on ships operating in the waters enclosed by the amendments to the Fisheries Act. [redacted]

The most important piece of legislation in this series, according to one of Trudeau's key foreign policy advisers, was the Arctic Waters Pollution Prevention Act (AWPPA) which was passed in April 1970 and promulgated in August 1972—the delay in implementation was due to a controversy over establishing financial liability limits under the Act. The AWPPA spelled out ship construction requirements, particularly hull thicknesses and fuel and storage tank design, permissible zones for navigation, and a prohibition against dumping waste in Canada's Arctic waters. The Act provided that any person having an accident, either on land or sea, within the zone covered by the Act (figure 6) was financially responsible for damages caused and for cleanup operations. In addition, individuals and ships found in violation of the construction or navigational safety standards or antipollution provisions of the Act could be fined. Canadian officers charged with enforcing the Act were given broad powers, including the authority to seize a ship and its cargo if they had reasonable grounds to suspect that the Act had been contravened. The AWPPA, which is important to Canadian claims of sovereignty in the Arctic, is also gradually becoming internationally recognized by governments and legal scholars as a

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realistic and appropriate response to a unique problem that could easily and rapidly degenerate into an ecological disaster.<sup>3</sup> [REDACTED]

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<sup>3</sup> The Law of the Sea Treaty recognizes, among other things, the right of coastal states to control both renewable and nonrenewable offshore resources, to take measures to prevent marine pollution, to establish territorial seas up to 12 miles in breadth, and to create 200-mile Exclusive Economic Zones and extend jurisdiction in the zone for such functional needs as the protection of fisheries, the environment, and seabed resources. In addition, the Treaty contains a special provision for the expanded rights of coastal states to protect the marine environment in ice-covered waters. The Treaty's provisions have, in sum, the potential of giving international legal sanction to those sovereignty-enhancing measures adopted by the Trudeau government for the Arctic since 1970. Canada's success in the law of the sea negotiations provides an unusual instance in which a nation used a multilateral forum to legitimize a unilateral initiative that would have been unenforceable at the bilateral level.

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## Administration

Canada's Arctic region basically is a fiefdom of the federal government. For administrative purposes Ottawa has divided the region into two areas, the Yukon and the Northwest Territories (figure 3). The two units have territorial governments which attend to such matters as education, public works, and social development. Their limited powers, however, exist at Ottawa's pleasure. In addition, the Crown owns all the land and mineral rights north of 60 degrees north latitude. Because of this Ottawa does not find itself involved with the fractious conflicts that have long characterized federal-provincial politics in non-Arctic Canada. It seems unlikely, therefore, that Ottawa will be in any hurry to raise its Arctic territories to provincial status. [REDACTED]

Yukon and Northwest Territories. DIAND is the central repository of constitutional power, and is, in essence, a province-like authority that functions as a "Colonial Office" in administering and developing Ottawa's northern empire. It makes all decisions affecting land use, conservation, and industrial development. The nature of DIAND's mandate involves a conflict of interest, even within the Department, in that the requirements of northern economic and resource development are often in direct conflict with the needs and desires of the north's nonnative and native peoples. [REDACTED]

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Eleven federal departments are now involved in the administration of the region.<sup>4</sup> This has resulted in some fragmenting of authority and overlapping of responsibilities, limiting Ottawa's ability to develop a comprehensive Arctic policy. The surveillance and protection of the Canadian Arctic, for example, are divided among four administrative entities—patrol aircraft are controlled by the DND, icebreaking activities are the responsibility of the CCG, fisheries protection is provided by the DOE, and the RCMP Marine Service has responsibility for enforcing maritime regulations. Ottawa currently is engaged in reducing the number of departments involved in Arctic administration. It is seeking to concentrate northern responsibilities in DIAND, EM&R, and, to a lesser extent, DND. [REDACTED]

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DIAND, by statute the dominant federal agency in the Canadian Arctic, is responsible for coordinating the orderly political and economic development of the

<sup>4</sup> These include the departments of Indian Affairs and Northern Development (DIAND), External Affairs (DEA), Environment (DOE), National Defense (DND), Energy, Mines, and Resources (EM&R), Science and Technology (DS&T), Industry, Trade, and Commerce (ITC), Transport (DOT), the Canadian Broadcasting Company (CBC), the National Research Council (NRC), and the Office of the Solicitor General (SG). The last two mentioned departments respectively control the Canadian Coast Guard (CCG) and the Royal Canadian Mounted Police (RCMP). [REDACTED]

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## The Role of the Military

In April 1969 Prime Minister Trudeau defined the "surveillance of our territory and coastline, that is to say, protection of our sovereignty" as a primary mission of the Canadian Armed Forces (CF). Since Trudeau's pronouncement, the CF have increasingly emphasized this role, which includes assisting in the protection of territorial integrity, fisheries, the environment, and ocean resources. In pursuing this priority, the CF's operations in the Arctic, which are directed from a headquarters at Yellowknife, Northwest Territories, and principally carried out from a forward operations base at Frobisher Bay (figure 4), have been directed primarily toward such "constabulary" functions as reconnaissance, detection, interception, search and rescue, and aiding the civilian authorities in law enforcement, engineering, transportation, and communications.<sup>5</sup>

Ottawa's emphasis on the protection and enhancement of its Arctic sovereignty has caused both the government and the military to put increased public stress on the CF's ability to operate efficiently in the north. Ironically, the low levels of defense spending that have characterized the Trudeau era have, [redacted] effectively prevented the development of CF's northern capabilities to enforce the many-layered web of jurisdictional controls that Ottawa has fashioned for the Canadian Arctic. The surface warships of the CF's Maritime Command, for example, lack the capability to operate in Arctic Ocean waters except for brief periods during the summer. [redacted]

At the present time, Canada's Department of National Defense has determined, according to the *Canadian*

<sup>5</sup> The CF's limited ability to deploy quickly and effectively in the north led to its construction of the Dempster Highway, the first all-weather road from Dawson City in the Yukon to Fort McPherson and Inuvik in the Northwest Territories. The highway will also allow better commercial access to the region. The Dempster Highway project is an example of the CF acting as an "aid to the civil power." [redacted] 6, 7, 8

*Defense Quarterly*, that some of the measures necessary to make the CF a viable force in the Arctic and other frontier areas include:

- Reorganization and integration within the DND of the three other marine services—those of Department of the Environment (DOE), Department of Transport (DOT), and Royal Canadian Mounted Police (RCMP)—responsible for maritime surveillance and control. (This DND initiative is not universally favored within the government. The use of military forces to remove intruders from waters that Canada claims is thought by the nonmilitary departments involved in the administration of northern affairs to be an unnecessarily provocative policy—particularly if the offenders are individuals or corporations who are citizens of one of Canada's allies. Retaining a nonmilitary force for constabulary functions would, on the other hand, avoid giving a military connotation to simple policing operations.) 6, 7, 8
- Increased use of long-range surveillance aircraft and the construction of permanent forward airbases at such locations as Resolute and Inuvik in the Northwest Territories. Additional High Arctic bases would reduce deployment times for the CF in either civil or military emergencies. 6, 7, 8
- A significant increase in the level of CF manpower involved continuously in Arctic operations from the current total of 54 servicemen and 17 civilians. 6, 7, 8
- Increased training activities such as NORPLOY—the CF's annual northern deployment—to improve Arctic proficiency and establish a CF presence in the north, and to support defense, research, and development activities in the Arctic. 6, 7, 8
- The immediate development of an Arctic icebreaker program. [redacted]

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A recent joint report by four of Canada's leading strategic studies centers has suggested that all Canadian aircraft be withdrawn from Europe and be employed instead in the air defense of North America. In addition, the report recommends that Ottawa acquire three squadrons of aircraft for use in Arctic and coastal surveillance. These measures would reduce Canadian reliance upon US airpower and increase Ottawa's ability to protect its sovereignty claims in the Arctic and other frontier and offshore areas. As an additional priority military mission, Ottawa has placed increasing emphasis on the execution of sovereignty-related activities such as enforcing offshore fishing and antipollution regulations and patrolling the 200-mile Exclusive Economic Zone (figure 6). 

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## Environment

The Arctic region has an uncommonly fragile physical environment. The ecological system that has evolved in the Arctic must cope with the harshest of climatic conditions; the result is a very limited diversity in plant and animal life and concentrations of biological activity in a few areas. Some environmental scientists fear that the extinction of a single Arctic species could break the natural food chain on which all animal life in the region depends. In addition, the chemical deficiencies of the region lead to exceptionally slow growth processes and therefore retard rehabilitation after environmental damage. While economic and resource development and strategic considerations in the Arctic promise to promote intense competition along traditional national lines, international cooperation in protecting the environment is more important in the Arctic than elsewhere.

Since the early 1960s, the six littoral governments have been attempting to rectify what was an acute shortage of reliable information on the Arctic environment. Until the mid-1970s, in fact, Arctic environmental programs were geared more toward the acquisition of information than the elimination of threats to the environment. Arctic specialists have concluded that a list of the leading environmental dangers should include but not be limited to the following:

- Icebreaking-tanker routes that could disrupt the habitats and migratory patterns of seals and other marine mammals.
- Tanker routes that might interfere with the winter passages and the hunting and fishing grounds of the Arctic's Inuit and other native peoples.
- Increased air and maritime activity, both naval and commercial, in the Arctic Ocean area, which may significantly raise the level of noise pollution in the region.
- Pollution from either the foundering of an oil-filled tanker or the blowout of an oil well.

The possibility of a major spill is now regarded by Canadian and other scientists and environmentalists as the most potentially disastrous form of pollution in the Arctic. According to these specialists, the region's intense and nearly year-round cold acts to prevent the dispersal and degradation of hydrocarbon spills. As a result, spills would remain more toxic over longer periods than would be the case in more temperate climates. In addition, the Arctic ice cover could conceivably hide a spill and thereby delay detection and cleanup efforts.

Among the most serious dangers posed by a spill would be the possibility of damaging the delicate albedo—the ability of the region's ice cover to reflect sunlight. Once covered with oil the ice cover would begin to absorb rather than reflect sunlight; the resulting melt could hold potentially catastrophic consequences for weather conditions, temperatures, and water levels in other parts of the world. In addition, oil spills would threaten many species of Arctic marine mammals and migratory birds.

Ottawa's Arctic Waters Pollution Prevention Act was not only an important sovereignty-enhancing measure but was also aimed at preventing oil spills. The AWPPA spelled out safety and zoning regulations (figure 6), but it did not define a comprehensive and enforceable federal environmental policy. The federal Department of the Environment, for example, has little control over the pace or content of northern development aside from a statutory responsibility for the protection of fish stocks and migratory birds in Arctic areas. The DOE often is not even aware of the activities of the many other departments with northern responsibilities. The DOE attempts to keep abreast of what other departments are doing by perusing the activity plans and expenditure estimates

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provided to the Treasury Board by all federal departments. For the most part, however, the DOE can only react to events in the Arctic and provide support—when it is requested—to DIAND, EM&R, and other departments possessing greater statutory and regulatory powers. [REDACTED]

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A bureaucratic battle is developing now between DOE and DIAND over protecting the Arctic environment. The DOE argues that the northern development portion of DIAND's mandate is currently controlling the department's policies and operations and that environmental interests in the Arctic are, as a result, being inadequately protected. The DOE favors a comprehensive federal environmental protection policy on northern development, including a uniform and mandatory environmental impact assessment process to be conducted under its auspices, but DIAND, however, has blocked most efforts aimed at such an overall policy. [REDACTED]

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Throughout its existence DIAND has worked closely with private industry in formulating and executing economic and resource development plans in the north. Having spearheaded Arctic development, private industry and DIAND have been the foremost gatherers of environmental information and together they control access to it. Ottawa has delegated to DIAND the responsibility for determining the sufficiency of the environmental information which has been jointly accumulated. The continuing primacy of DIAND among the departments of the federal bureaucracy that deal with the Canadian Arctic seems to assure that, at least for the moment, the interests of industry and the national need Ottawa perceives for accelerated northern economic development will continue to prevail over the objections of the environmentalists. [REDACTED]

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## Arctic Peoples

The permanent residents of the Canadian Arctic fall into two categories: nonnatives, mostly those people who have emigrated to the north from elsewhere in Canada; and the members of the various groups of native peoples, including the Inuit, the Metis, and the Dene. The Inuit is the largest and most politically influential of these groups, numbering in the vicinity of 23,000 and living in the Yukon, the Northwest Territories, northern Quebec, and Labrador. These two groups of northerners are divided on the question of which direction northern development should take, and, in addition, they are both at odds with the dominant northern development philosophy of the federal government. The concerns and desires of the northern population have become an influential factor in the formulation of Ottawa's Arctic policies. [ ]

### Nonnative Peoples

The basic demand of the nonnative inhabitants—who number 40,000 of the Canadian Arctic's total population of 68,000 and reside primarily in the region's six urban centers (figure 3)—of the Yukon and Northwest Territories is for provincial status. They have accused the federal government of treating them as a "colonial people." [ ]

[ ] one of the nonnatives' major complaints is that their territorial governments are unable to coordinate plans and programs with DIAND's Ottawa-based meetings and working groups because of excessive travel times and costs. They contend that this inevitably limits their knowledge of federal plans for the north. The chief desire of nonnative northerners is, [ ]

[ ] to create a situation in which Ottawa will come to agree to a gradual devolution of power that will lead to the territories becoming provinces. [ ]

1,2,3,6,7,8

The conditions that the Canadian Government has set down as prerequisites to provincial status suggest that such status will not soon be forthcoming. Ottawa insists that each territory must have a sufficient tax base to support itself; agreement must be reached on

the number of political units to be formed and the precise definition of their respective boundary lines; native peoples must be fully involved in the local political process; and the majority of each territory's population must want provincial status. [ ]

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### Native Peoples

The northern native peoples present Ottawa with what at times must seem an almost insurmountable obstacle to the development plans it deems as serving the "national interest." While nonnative northerners are basically part of the traditional Canadian political system, which combines participatory democracy with an abiding concern for the protection of individual rights, the north's native peoples are interested more in protecting their own "nations" than in becoming a more viable part of the Canadian polity. The native population tends to cluster in scattered, remote villages along the shores of bays, inlets, and the mouths of rivers. These locations reflect the natives' traditional lifestyle of fishing and marine-based hunting. The intransigence of native demands puts the Canadian Government in an uncomfortable position in that it has always prided itself—especially under Trudeau—on not seeking to assimilate minority groups. Ottawa has actively solicited and subsequently publicized the positions of the native peoples toward northern development and has said its primary aim in the north is to meet the "needs and aspirations of the native peoples." [ ]

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Land claims are at the core of the demands of the northern native peoples, and we consider a resolution of these claims a prerequisite for any settlement between Ottawa and them. The native peoples base their claims on what are termed aboriginal rights, that is, land rights that native people retain in perpetuity as a result of their original occupancy and

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Native village  6,7,6,

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Yellowknife, capital of the Northwest Territories

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traditional use of the land.<sup>6</sup> Ottawa does not reject this view out of hand, but prefers to satisfy native land claims on the basis of what it describes as social justice—fulfillment of a portion of the natives' demands but tempering and thereby reducing such awards by including a calculation of the benefits that will accrue to the native peoples as a result of federal development expenditures in the region. [redacted]

8. In addition, spokesmen of the Dene group of the western Arctic area have, since 1975, argued in a number of international forums that it may become necessary for them to press for national self-determination and ultimately an independent nation. The Dene have recently moderated their demands somewhat, according to US consular officials, and now appear ready to attempt to remain within the Canadian national framework. Their current demands, however, which amount to seeking a "special status" within confederation, are still well beyond what Ottawa is willing to accept. We believe the Dene appear to be attempting to establish for themselves the same sort of unique position in the confederation that Quebec has consistently sought. Ottawa obviously has little desire to create another Quebec-like, separatist-oriented entity.

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In addition to causing a confrontation with Ottawa, the demands of the native peoples put them at odds with nonnative northerners. The native peoples have made it clear, for example, that they will not support efforts to attain provincial status for the territories until their land claims are satisfactorily settled and they are guaranteed a certain percentage of representation in any future territorial or provincial legislature regardless of their percentage of the population. Neither of these demands is likely to be met in the near future, however. And, without the support of the native peoples, the promoters of provincial status for the Yukon and Northwest Territories will be unable to gain the endorsement of a majority of the population—one of Ottawa's essential conditions. [redacted]

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The growing tendency of Canadian native groups to define themselves and their needs in transnational terms is making Ottawa's predicament worse. Since 1977, for example, the Inuit of Canada, Alaska, and Greenland have established contacts through an organization known as the Inuit Circumpolar Conference. The conference emphasizes Inuit claims for free and unrestricted travel and trade across the whole of the North American Arctic. The Inuit claim that national boundaries have no place in their culture and society and that borders therefore threaten Inuit survival.<sup>7</sup> In

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<sup>6</sup> While the native peoples publicly hold to the doctrine of aboriginal rights, they are not beyond attempting to bargain away their so-called birthright if the price is right. The Inuit of the Mackenzie Delta region, for example, are currently demanding outright ownership of 700 square miles, surface rights ownership—hunting, fishing, and trapping rights—on an additional 32,000 square miles, and a \$36 million cash award in 1978 dollars. In return the Inuit are willing to abandon any further claim to awards under the doctrine of aboriginal rights. [redacted]

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<sup>7</sup> The boundary matter is another complicating paradox in native demands. While the Canadian Inuit join with those of other countries in protesting international boundaries, they have, at the same time, concluded an agreement "in principle" with Ottawa to divide the Northwest Territories at the tree line with the resulting northern section becoming the territory of an Inuit "nation" to be called Nunavut. [redacted]

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## Energy Policy

The Canadian Arctic region is gradually becoming the focus for Ottawa's hope of attaining energy self-sufficiency by 1990. The Geographical Survey of Canada has estimated that the Arctic's two main oil and natural gas basins—the Mackenzie Delta/Beaufort Sea area and the High Arctic islands—may contain between them approximately 13 billion barrels of oil and 200 trillion cubic feet of natural gas. Spokesmen for Dome Canada, Ltd, have estimated that Beaufort Sea oil will be in production by 1989. In addition, the Survey estimates that the region contains coal reserves totaling nearly 130 billion tons. Assuming that the reserve estimates are accurate and that the supplies are 100 percent recoverable, they would represent for Canada (at 1981 rates of consumption) domestic supplies of the following duration: petroleum, 22 years; natural gas, 108 years; and coal, 3,400 years. [REDACTED]

The development of these areas would also promote the growth of the Canadian economy. Officials of the Department of Energy, Mines, and Resources have estimated that full-scale development in the Beaufort Sea could result in a total project investment of \$81 billion, 75 to 90 percent of which would be spent in Canada. We believe declining reserves in Alberta's aging oilfields and the decision of private industry to decrease their participation in the proposed government-industry development of the Alsands and Cold Lake tar sands projects in Alberta—which were to have added more than 250,000 barrels per day to Canadian domestic oil supplies by the late 1980s—will also add impetus to Ottawa's drive to produce oil and natural gas in the Arctic at the earliest possible date. In the Arctic, the profit motive of private industry has dovetailed nicely with Ottawa's decision to open the north. [REDACTED]

With the introduction in 1980 of the National Energy Program (NEP)—a plan designed to free Canadian energy resource development from US domination, promote energy self-sufficiency, increase federal revenues, and tip the balance of power in the federal-provincial energy relationship in Ottawa's favor—

Ottawa established guidelines ensuring that Arctic energy resources will be developed and controlled by Canadians. The NEP assumes that it is in the interest of all Canadians to know the extent of hydrocarbon resources in the Arctic and that the government should make every effort to promote exploration and development. The NEP divided the Arctic into three developmental regions: between 60 degrees north latitude and 65 degrees north latitude, between 65 degrees north latitude and 70 degrees north latitude, and beyond 70 degrees north latitude or the offshore, whichever comes first. Development leases run longer, and the amount of exploration required to retain them decreases, the further north they are. [REDACTED]

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NEP regulations permit only Canadian citizens or those corporations with at least 50-percent Canadian ownership to obtain oil and natural gas production licenses in the Arctic. Exploration agreements concluded before 1980 must be renegotiated in order to accommodate the NEP's requirements for developer commitments to a binding exploratory schedule. Once granted, these leases cannot be transferred or assigned to anyone who would not qualify under Canadian participation requirements. In addition, Arctic developers must also offer Canadian investors the opportunity to participate in the financing and ownership of northern operations. [REDACTED]

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Another effort by Ottawa to encourage energy exploration in frontier areas is a provision of the NEP known as the Petroleum Incentive Program (PIP). The government awards PIP grants to cover a portion of both exploration-related expenditures and the costs of continuing operations. These grants increase as the percentage of Canadian participation in the exploration effort increases. For example, Ottawa returns to companies with 75-percent Canadian participation 80 cents of every dollar spent on exploration or continuing operating expenses. Of the big three private Arctic

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developers—Gulf Oil, Imperial, and Dome Canada—Dome receives the highest rate of federal support. Even a foreign-controlled corporation like Gulf Resources, however, can expect to receive PIP grants amounting to 35 cents on each dollar it expends on exploration activities and continuing operating costs. The PIP program is extremely important in promoting frontier energy exploration work because the costs for exploration, development, and production in the Arctic in 1983 are estimated to be triple the costs incurred in conventional onshore drilling elsewhere in Canada.<sup>8</sup> It also has the advantage of maintaining expensive exploration activities at times when a world oil glut or the stagnation or decline of world oil prices would normally curtail or even terminate such speculative enterprises. [redacted]

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[redacted] private-sector exploration expenditures increased by 50 percent in 1982—a year of declining oil prices—in response to the grants offered under the NEP. [redacted]

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<sup>8</sup> Average capital and operating costs, exclusive of costs incurred through exploration activities, for a large Beaufort Sea oil development, for example, would total \$8 to \$12 per barrel. This is comparable to the \$10 to \$12 per barrel average capital and operating costs that the British Department of Energy estimates for North Sea oil production. Transporting Beaufort Sea crude to southern Canada and the United States is expected to add \$4 to \$12 more per barrel. Pipeline transport would be more expensive than the alternate tanker delivery system. In January, *Business Week* estimated that Arctic crude would be competitive with OPEC crude priced around \$33 per barrel. [redacted]

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## Energy Development

Energy exploration and development in Canada's Arctic region is being carried out by both the federal government and private industry. Petro-Canada, the state-owned oil company, leads government efforts in the area, while Dome, Imperial, and Gulf Canada, Ltd, are the major private companies involved in development. [REDACTED]

**Federal Development Agencies and Projects**  
**Canadian Oil and Gas Lands Administration.** The Canadian Oil and Gas Lands Administration (COGLA), created in March 1982, is, according to the *Montreal Gazette* for 19 September 1982, probably the most effective instrument of "Canadianization" now involved in Arctic energy development. Operating under the aegis of the NEP, COGLA approves exploration plans, national company content, and farm-out and farm-in rules<sup>9</sup> for all frontier activities on the "Canada Lands" (see figure 3). The Canada Lands are almost equivalent to a "super-province" encompassing the continental shelf of the Atlantic, Pacific, and Arctic coastlines, Hudson Bay (an area larger than eight of the 10 provinces), plus all the lands of the Northwest and Yukon Territories. In the Arctic, the Canada Lands include all the territory from the North Pole to the southern tip of James Bay and from the Alaskan border east through the Yukon and Northwest Territories and the myriad Arctic islands. [REDACTED]

COGLA rules require the leasees eventually to return 50 percent of their holdings to the Crown, although each private developer will have the right to retain all significant discoveries and those promising locations it selects for additional exploration. The 50 percent returned to Ottawa will almost certainly be those lands proved to have no productive potential, and their return thus will allow the leasee to end rental payments on unpromising tracts. [REDACTED]

<sup>9</sup> The processes of "farming-in" and "farming-out" involve an arrangement whereby a portion of an original leaseholder's obligatory drilling program is taken over by a second company. In this situation, the original leaseholder is farming out, and the second company is farming in. [REDACTED]

COGLA was formed by giving it jurisdiction over DIAND's Northern Nonrenewable Resource Branch and EM&R's Key Resource Branch. COGLA's director, however, reports to the ministers of those two departments. This procedure limits the ability of other departments that work on the environmental problems and land claims in the Arctic to influence the direction of northern energy development. As a result, we expect that COGLA's decisions will strengthen the developmental emphasis of Ottawa's Arctic policy. [REDACTED]

COGLA was organized after studies were made of similar agencies employed by Great Britain and Norway to maximize national industrial and commercial benefits from North Sea development. The British and Norwegian organizations increased their respective national involvement in North Sea activities from 25 percent to 79 percent and 17 percent to 60 percent in less than a decade. COGLA requires that all firms submit "Canada benefit plans" so as to ensure their fulfillment of domestic procurement requirements. As a result, local firms have an advantage in gaining access to the industrial and commercial opportunities arising from exploration activities. In our opinion, COGLA will help to keep "spinoff" benefits in Canada, promote bureaucratic efficiency, and give the federal government the "concentrated clout" that the scope of northern energy development work demands. [REDACTED]

**National Research Council.** Canada's National Research Council (NRC) is extensively involved in activities to assist in the development of Arctic energy resources, particularly the development of liquefied natural gas (LNG) tanker technology, the design of icebreakers, and the formulation of Arctic pollution prevention regulations and standards. The NRC's concentration on marine transportation reflects Ottawa's judgment that the thrust of such transportation [REDACTED]



in the Arctic has shifted from the resupply of local communities to the establishment of an infrastructure to support economic development in the region. [redacted]

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Construction began in May 1981 on the NRC's Arctic Vessel and Marine Research Institute in Newfoundland, where such Arctic problems as the effects of the movement of the Beaufort Sea icepack on oil drilling rigs will be studied. In addition, the NRC is currently cooperating with the US National Aeronautics and Space Administration in the use of two US satellites to track 20 transmitters Canadian authorities have placed in the Arctic to measure the thickness of the icepack by recording surface temperatures. Ottawa also plans to spend \$300 million by 1990 for a pair of satellites equipped with microwave radar to help ships through Arctic ice floes. The NRC's activities are part of Ottawa's attempt to give Canada an advantage in Arctic technologies such as marine transportation engineering, oil and natural gas production methods, and the design of LNG tankers.

**Petro-Canada.** The driving wedge of Ottawa's energy development efforts in the Arctic, according to COGLA's Annual Report for 1982, has been Petro-Canada (Petrocan), the state-owned oil company formed in 1975. Part of Petrocan's original mandate was to direct public funds toward high-risk frontier areas which were largely unattractive to private investors. Petrocan today controls 26.8 million acres in the Beaufort Sea and the Northwest Territories and 25 million acres in the High Arctic islands. The latter holding was largely acquired through a direct purchase from Atlantic Richfield Company in 1976. In addition, NEP provisions allow Petrocan a 25-percent back-in right on all leased-out federal lands—a provision which, while annoying to multinational corporations, is much less detrimental to their interests than the 50 percent taken by Norway's Statoil.<sup>10</sup> The

<sup>10</sup> The back-in provision of the NEP reserves to the Crown a 25-percent interest in every lease awarded on the Canada lands. The back-in interest is held by Petro-Canada and is applicable to all leases, whether let before or since the introduction of the NEP. Because of its retroactive nature, the NEP's back-in has generated a greater degree of political controversy than has the program of Statoil, which has been on the scene since the beginning of Norwegian oil development in the North Sea. [redacted]

strong hand dealt to Petrocan by the federal government gives Ottawa an effective instrument with which to deflect the political power and influence of multinational corporations. [redacted]

**Panarctic Oil, Ltd.** Panarctic, which is controlled by Petro-Canada, has concentrated its activities amid a cluster of Arctic islands about 600 miles northwest of the continental Arctic coastline. The company's major natural gas discovery occurred in 1969 at Drake Point in the northeast section of Melville Island.<sup>11</sup> Estimated reserves at Drake Point amount to 5.3 trillion cubic feet (tcf) of natural gas—the *Oil and Gas Journal* has estimated that the Canadian High Arctic area as a whole contains 18 tcf of natural gas, an amount well beyond the threshold required for production. *Business Week* has pegged this figure as representing nearly 20 percent of Canada's total natural gas reserves. Panarctic plans to construct a \$2.3 billion (LNG) plant on barges at Drake Point to tap and liquify the gas. The gas would then be transported 160 kilometers through a buried pipeline to be built from Drake Point to Bridport Inlet—probably the best natural port in the Canadian Arctic—on the southern coast of Melville Island. At Bridport the gas would be processed and loaded on specially designed icebreaking LNG tankers and shipped eastward through Lancaster Sound and the Davis Strait to a destination on the St. Lawrence River in Quebec or to the Melford Point Terminal near Canso on the east coast of Nova Scotia (figure 3). Panarctic's current production target is to ship 306 million cubic feet per day (mcf/d) from Melville Island by 1988. [redacted]

Although the natural gas produced in the Canadian Arctic was originally intended for domestic and US markets, Ottawa's projected Arctic production facilities ultimately may secure a share of the West European natural gas market. In late 1982, a four-company Canadian-West German consortium announced plans to build a gas liquefaction plant on

<sup>11</sup> According to the July 1982 *Oil and Gas Journal*, the Panarctic-headed consortium made three significant oil discoveries in the High Arctic islands in the summer of 1982. Estimated reserves in these three finds total 750 million barrels, but oil production in the High Arctic islands is not expected to begin before the year 2000. [redacted]

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Ellef Ringnes Island by 1988 (figure 5), similar to the one planned at Drake Point. The consortium intends to tap natural gas reserves in the area around King Christian Island and eventually ship 500 mcf/d to West Germany. The estimated cost of the project is \$4 billion, and the consortium is two-thirds Canadian owned—one-third each held by Petrocan and Trans-Canada Pipelines, Ltd—and one-third controlled by the West German companies Ruhrgas AG and Gelsenberg AG. Petrocan is also discussing the possibility of conducting a similar undertaking with the French firm Gaz de France. [REDACTED] 6, 7, 8

**Arctic Pilot Project.** The main Canadian Government-sponsored energy development project in the Arctic, according to a report of the Canadian Senate issued in March 1983, is the Arctic Pilot Project (APP)—Panarctic's proposed natural gas facility on Melville Island. The APP is an all-Canadian operation. The four partners in the venture are Petrocan, Nova Corporation of Alberta, Dome Petroleum, and Melville Shipping, with respective ownership shares of 37.5 percent, 25 percent, 20 percent, and 17.5 percent. [REDACTED]

The APP is designed to produce commercially profitable natural gas in the area of the High Arctic islands, and it is currently spending about \$1 million per month to that end. The APP also is designed to ensure that Canadians attain maximum participation in the project—current estimates are that during the construction phase 74 percent of the capital involved will be Canadian and, during the operational phase, 94 percent. Ottawa maintains that the APP will benefit Canada in the following ways:

- Critically important Arctic transportation technology will be developed particularly in regard to tankers with icebreaking capabilities, which will make Canada the world leader in the field.
- Private industry will become accustomed to participating in Arctic development.
- Significant additions will be made to the fund of environmental knowledge about the Arctic.

- Safe, economic access to Arctic energy will be provided through the development of a fleet of Arctic tankers and safe navigational routes.
- The project will establish an infrastructure for future projects.
- The year-round presence of a commercial enterprise in the western Arctic will amount to effective occupancy of the immediate area and will therefore underscore the validity of Canadian sovereignty claims in the Arctic archipelago.<sup>12</sup> [REDACTED]

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The major oil companies shunned the High Arctic islands until the late 1960s when they began to purchase leases both in that area and in the Mackenzie Delta/Beaufort Sea region. The administrators of DIAND were concerned that, since the oil companies were obviously intent upon developing the latter region first, the Arctic island leases were being acquired as a hedge against the future and not as a first step toward immediate development. In order to forestall an industry-inspired freeze on High Arctic development, DIAND bought a 45-percent interest in Panarctic Oil in 1966. Petrocan has since increased Ottawa's share to 53 percent. [REDACTED]

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#### Private-Sector Enterprises

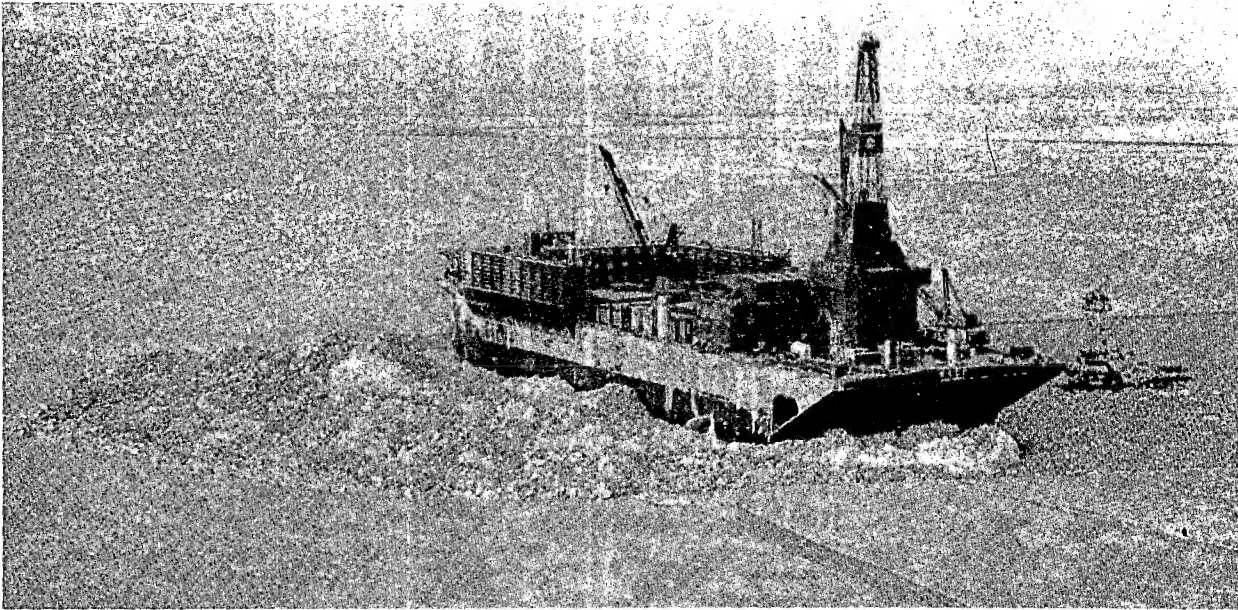
**Dome Canada, Ltd.** In the private sector, Dome, Gulf Canada, Ltd, and Imperial Oil, Ltd are the leading oil and natural gas developers in the Canadian Arctic. Dome has been the aggressive and innovative leader in the region since drilling its first Arctic oil well in the winter of 1961/62. Since the NEP was promulgated in 1980, Dome has been Ottawa's primary instrument of Canadianization in the private sector, particularly in the Beaufort Sea area. The company was already on the scene in the Arctic, and it moved quickly to secure the requisite level of Canadian ownership. Dome's leased acreage is mostly in deep-water areas of the Beaufort Sea, and the company

<sup>12</sup> The Arctic Pilot Project is opposed by a number of international environmental groups and native groups, the latter because of pending land claims in the APP region and the former because of fear of potential noise and oil pollution by tankers along Greenland's dangerous ice-clogged coastal waters. [REDACTED]

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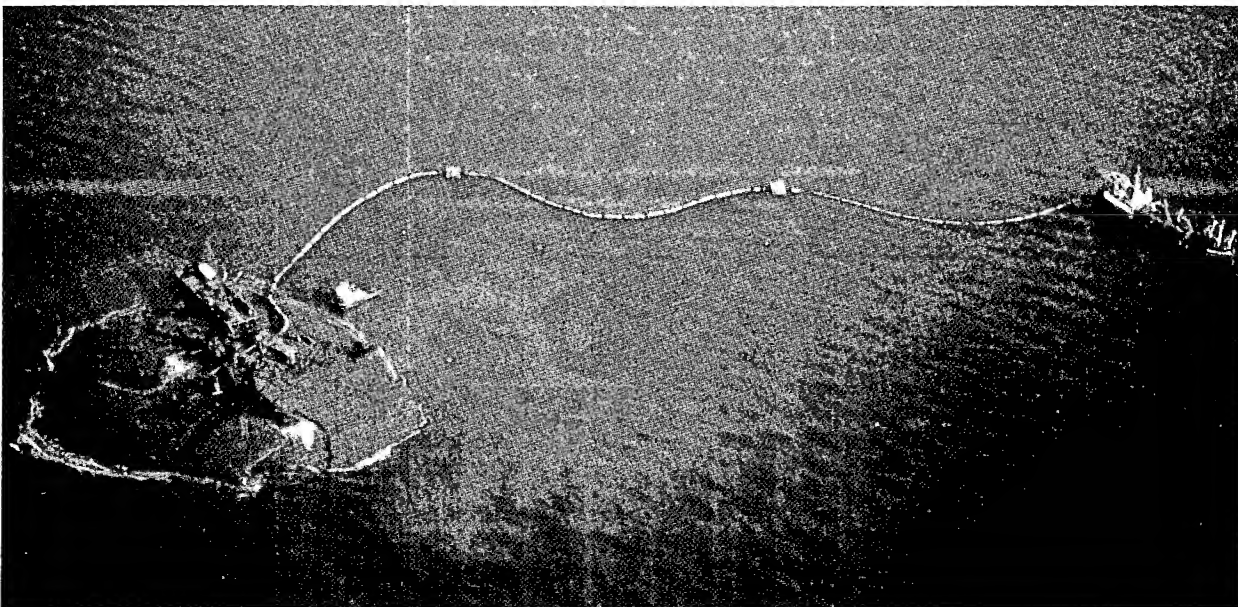
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*This unique platform, created by modifying the hull of a supertanker, was used by Dome successfully to drill this past winter in the Beaufort Sea. Dome's drilling platform is a submersible barge designed to sit upon an underwater gravel island at a depth of about 70 feet. Although Arctic drilling platforms are expensive to construct—in the vicinity of \$57 million each—they need only be built once, whereas gravel islands need to be rebuilt nearly every year and the cost of a 60-foot gravel island ranges between \$60 million and \$120 million. In addition, the oil companies are attracted to the caissons because the cost of leasing can be included as a continuing operating expense and is therefore eligible for coverage by PIP grants.*

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*Construction of an artificial drilling island in the Beaufort Sea*

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maintains a fleet of four drill ships, eight icebreaking supply ships, one class-four icebreaker, and three oceangoing barges. The company is now spending an estimated \$800,000 per day to support its Beaufort activities and tentatively plans to build a deepwater port at Kings Point on the Yukon's northern coast.

In many ways Dome has used the Beaufort Sea as a vast laboratory for developing technology to exploit Arctic energy resources. Dome has, in particular, specialized in marine engineering and claims some notable successes:

- Development of a safe tanker route through the Northwest Passage to Canso, Nova Scotia, that would take between 32 and 45 days.
- Construction of a prototype icebreaking tanker with a spoon-shaped bow that has broken 30 feet of ice—conventional icebreakers are usually stopped by anything more than 15 feet of ice.
- Success in drilling from a mobile platform rather than a gravel island—the latter generally erode from ice movement in about a year. The success of the mobile, manmade platform holds out the possibility of year-round drilling in the Arctic.

Dome's accomplishments in Arctic drilling and transport technology have put Canada ahead of both the Soviet Union and the United States in developing and transporting Arctic energy resources [redacted] 7,8

While Dome has taken the initiative in these exploration measures, the policies of the federal government have encouraged it to do so. The NRC's present and projected involvement with satellite tracking and navigational facilities in the Arctic region has made Dome's own navigational and ship-design studies more worthwhile. In addition, the NEP's PIP grants have encouraged Dome and the other private-sector Arctic resource developers to increase the annual duration of their drilling activities in the region. Dome's development of a manmade mobile drilling platform in the Beaufort Sea is an example of such an effort to lengthen the drilling season. [redacted]

Dome is the leading proponent of the establishment of icebreaking tankers as the primary delivery system for Arctic energy resources, arguing that the threshold of recoverable reserves is much lower for tankers than it is for pipelines—700 million barrels for a tanker system as compared to 2.5 billion barrels for a pipeline (see photograph). Dome estimates that the cost of a tanker delivery system would be \$2.4-3.2 billion, while a pipeline would cost at least \$9.7 billion. Dome also maintains that a tanker system is more adaptable to changing market demand and energy reserve level requirements. Seeking Ottawa's concurrence and financial support for a tanker delivery system, Dome officials claim that such a system would be the best way to achieve the NEP's national objectives of bringing Arctic oil into production at the earliest possible date and maximizing regional and industrial spinoff benefits for Canada. Behind Dome's insistence on the utility of LNG tankers is the corporation's belief that Arctic island gas will reach markets ahead of Mackenzie Delta gas because Ottawa, through Petrocan and Panarctic, has a direct stake in the islands and therefore will derive profit from gas sales.<sup>13</sup> [redacted] 7,8

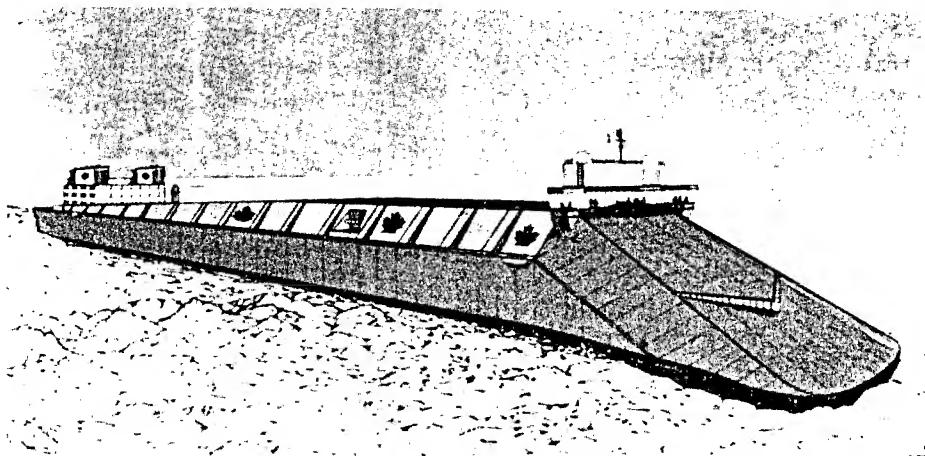
**Gulf Canada and Imperial Oil.** Gulf Canada, Ltd, currently conducts activities in 2.7 million acres in the Beaufort Sea and is spending an estimated \$546 million on the development of new drilling systems and the construction of two new icebreakers and two supply ships. The new vessels will augment Gulf's present Beaufort fleet of two drilling units, two icebreakers, and two supply boats. Gulf was the first of the major Beaufort developers to renegotiate its leases under COGLA terms in May 1982. Gulf's action has demonstrated that the requirements of the NEP and COGLA can be accommodated and has thereby given renewed impetus to private Arctic energy development—particularly among foreign-controlled corporations. Spokesmen for COGLA have said that the agreement with Gulf will set a pattern

<sup>13</sup> Dome's arguments have apparently persuaded Ottawa of the efficacy of a tanker delivery system. The March 1983 report of the Senate Special Committee on the Northern Pipeline, for example, recommended that "the transport of hydrocarbons from the Arctic region commence by tanker." [redacted] 7,8

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The tankers being proposed to transport oil through the Arctic seas will be ice Class 10, double-hulled vessels with an oil-carrying capacity of 200,000 tons (approximately 1.5 million barrels)



Hydrocarbon Development in the Beaufort Sea-Mackenzie Delta Region, EIS, Dome Petroleum Limited, Esso Resources Canada Limited and Gulf Canada Resources Inc, 1982

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between Canadian-owned companies and multinational leaseholders—Gulf had to agree to participate in a consortium with several Canadian companies before successful renegotiation was possible—and that Canadian firms will gain frontier operating experience from participation.

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Imperial Oil is currently a member of a consortium that plans to spend \$600 million on exploration activities in the Arctic through 1985. The Canadian-owned firm Home Oil will be the operator of the consortium, and the effort is expected to receive PIP grants in the amount of 60 to 70 percent of the total expenditure. Although foreign controlled, Imperial itself will receive PIP monies amounting to about 35 cents per investment dollar. Imperial also tentatively plans to spend \$2 billion by 1990 to build a 500-mile pipeline running from the Beaufort Sea south to refineries in Alberta.

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### Nonenergy and Renewable Resources

The Canadian Arctic is also rich in a variety of non-energy resources such as zinc, lead, tungsten, gold, copper, asbestos, iron ore, and silver. A lack of labor and viable transportation systems have delayed the development of these resources—the Yukon and Northwest Territories produced only 2 percent of Canada's total mineral output in 1976, an amount valued at \$334 million—but substantial federal subsidies have recently reinvigorated exploration and development activities. At the present time there are 12 mines operating in the Arctic area (figure 1).

COMINCO's \$150 million "Polaris" zinc mine in the eastern Arctic is the region's largest nonenergy resource development and the world's northernmost metal mine. In addition, Mary River, east of Arctic Bay on Baffin Island, is believed to be the site of an exceptionally rich and extensive iron ore deposit.

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Canada's Arctic region has only a limited number of renewable resources and they are primarily developed at a subsistence level by the native population. Fish and the pelts of various fur-bearing marine and land mammals are the area's major renewable resources.

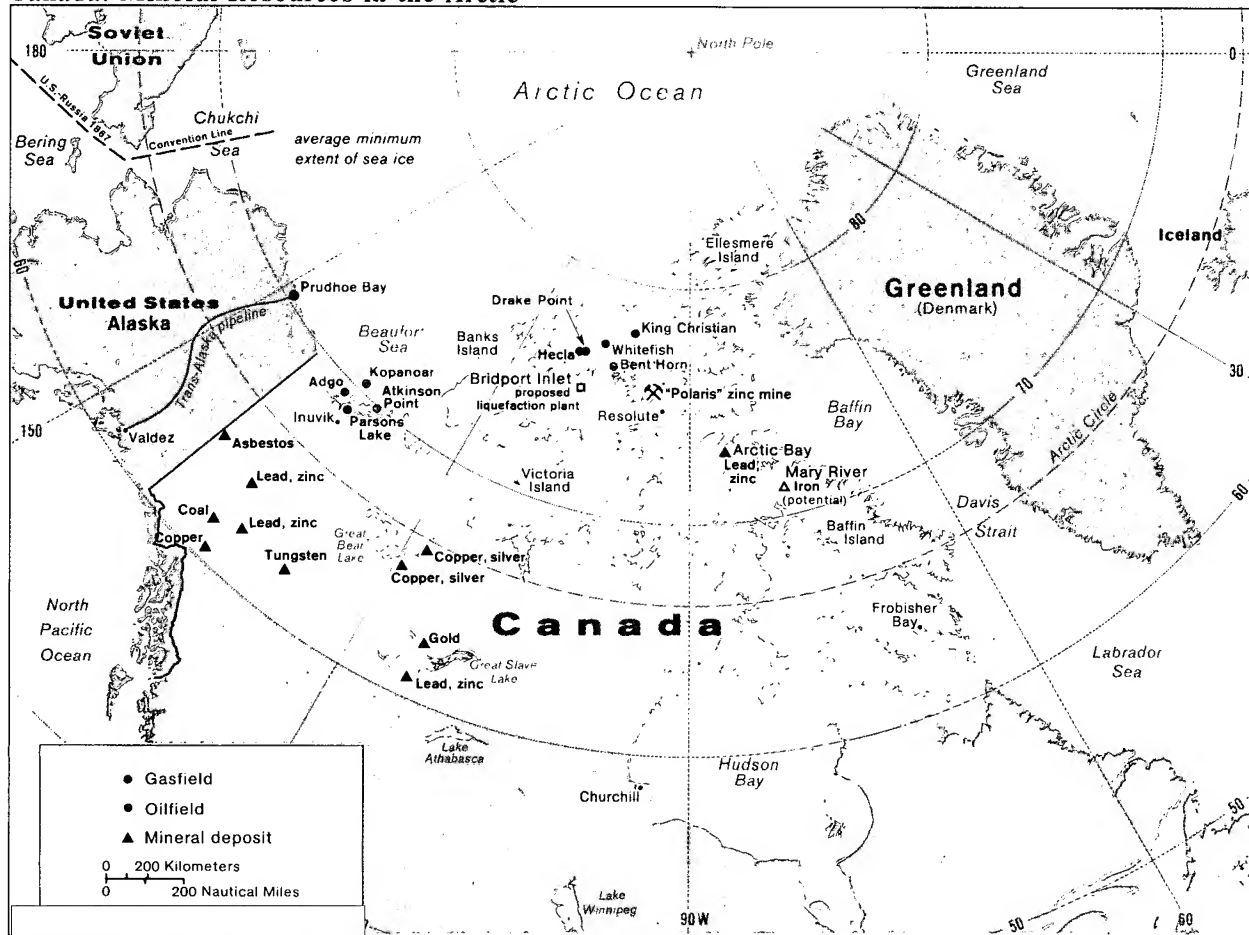
In December 1982, Ottawa announced plans to provide federal funds for the development of commercial fishing grounds north of the Arctic Circle ☐ 6, 7, 8

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**Figure 1**  
**Canada: Mineral Resources in the Arctic**



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## US Interests

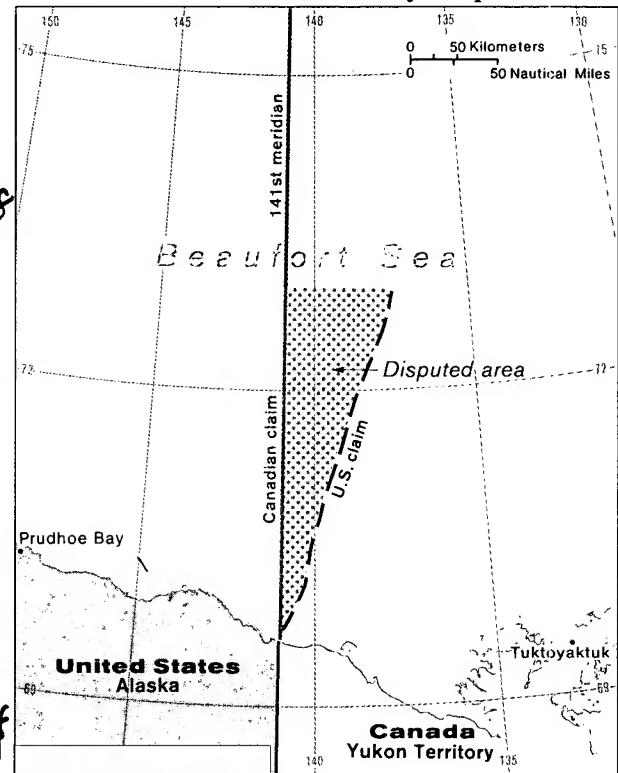
Like most of the other polar nations, the United States became interested in the Arctic region only in the period after World War II. At present, US interests in the region are focused on strategic and military considerations, energy resource developments, and maritime transportation routes.   6,7,8

Since 1945 the world's Arctic region has evolved into a superpower corridor for strategic weaponry. The area provides the shortest route between the United States and the USSR for ICBMs, manned bombers, and ground-launched cruise missiles. To cope with these threats, the United States has established, with Canada's cooperation, a number of early warning radar installations, the Distant Early Warning (DEW) Line, across the breadth of the North American Arctic. Several of these sites are located in Canadian territory—on Baffin Island in the Arctic Ocean and at Old Crow in the Northwest Territories, for example—and Washington has recently requested Ottawa's permission to establish several new facilities and to expand existing ones (see figure 4).  

Since 1968 US energy development in the Arctic has been centered in Prudhoe Bay in the Beaufort Sea off of Alaska's northern coast. In mid-1977 reserves in the area were estimated to be 10 billion barrels of oil and 1 trillion cubic feet of natural gas.   6,7,8

The apparent abundance of hydrocarbon resources in the Beaufort Sea has generated a boundary dispute between the United States and Canada. The controversy involves a question about whether the 141st meridian, the present boundary line between Alaska and the Yukon Territory running through the Beaufort Sea, represents the border between US and Canadian territory from the coastline to the North Pole. Ottawa maintains that this line was established by the Anglo-Russian Treaty of 1825 and continues to remain in effect. Washington rejects this assertion and argues for an "equidistant" line which would create a meandering boundary between adjacent or

**Figure 2**  
**Canada-United States Boundary Dispute**



opposite shores. The line proposed by the United States veers further eastward, away from the 141st meridian and into traditionally Canadian territory, as it is traced northward from the Arctic Ocean shoreline (see figure 2). While the dispute stands dormant at the moment, a hydrocarbon discovery of commercially exploitable dimensions straddling the boundary probably would spark renewed bilateral contention.  

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The security of maritime transportation routes through the Arctic Ocean is another point of contention between Washington and Ottawa since Canada claims exclusive control over navigation in the Northwest Passage. Arctic Ocean routes are essential to the movement of oil from Alaska's north slope fields to the US eastern seaboard either as a commercial venture or in an unexpected emergency situation such as that which might be generated by another OPEC oil embargo. Those same routes are also important to the worldwide mobility of US naval forces, particularly submarines, and the resupply of Arctic DEW line sites and US bases at Thule and Sondre Stromfjord in Greenland.

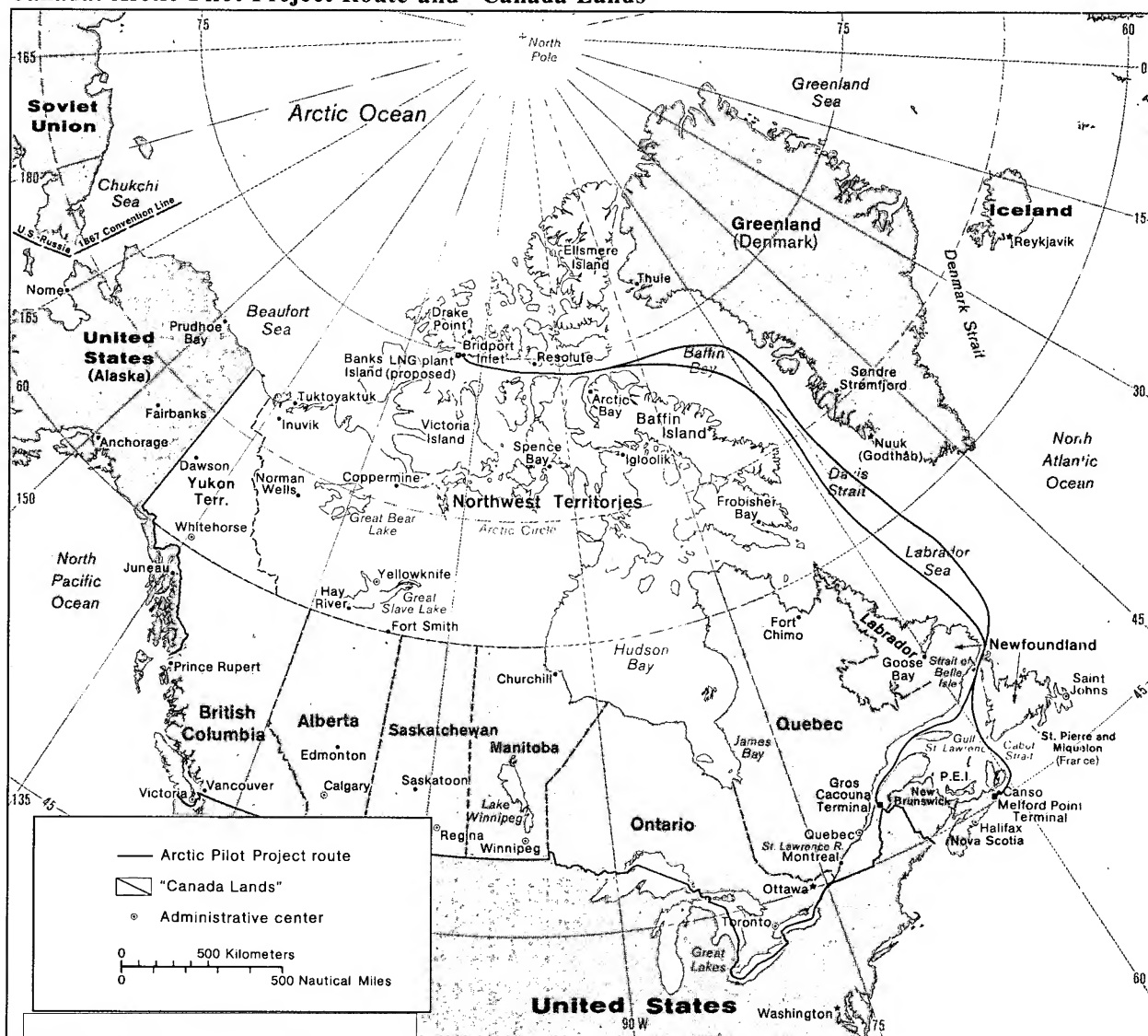
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Figure 3  
Canada: Arctic Pilot Project Route and "Canada Lands"



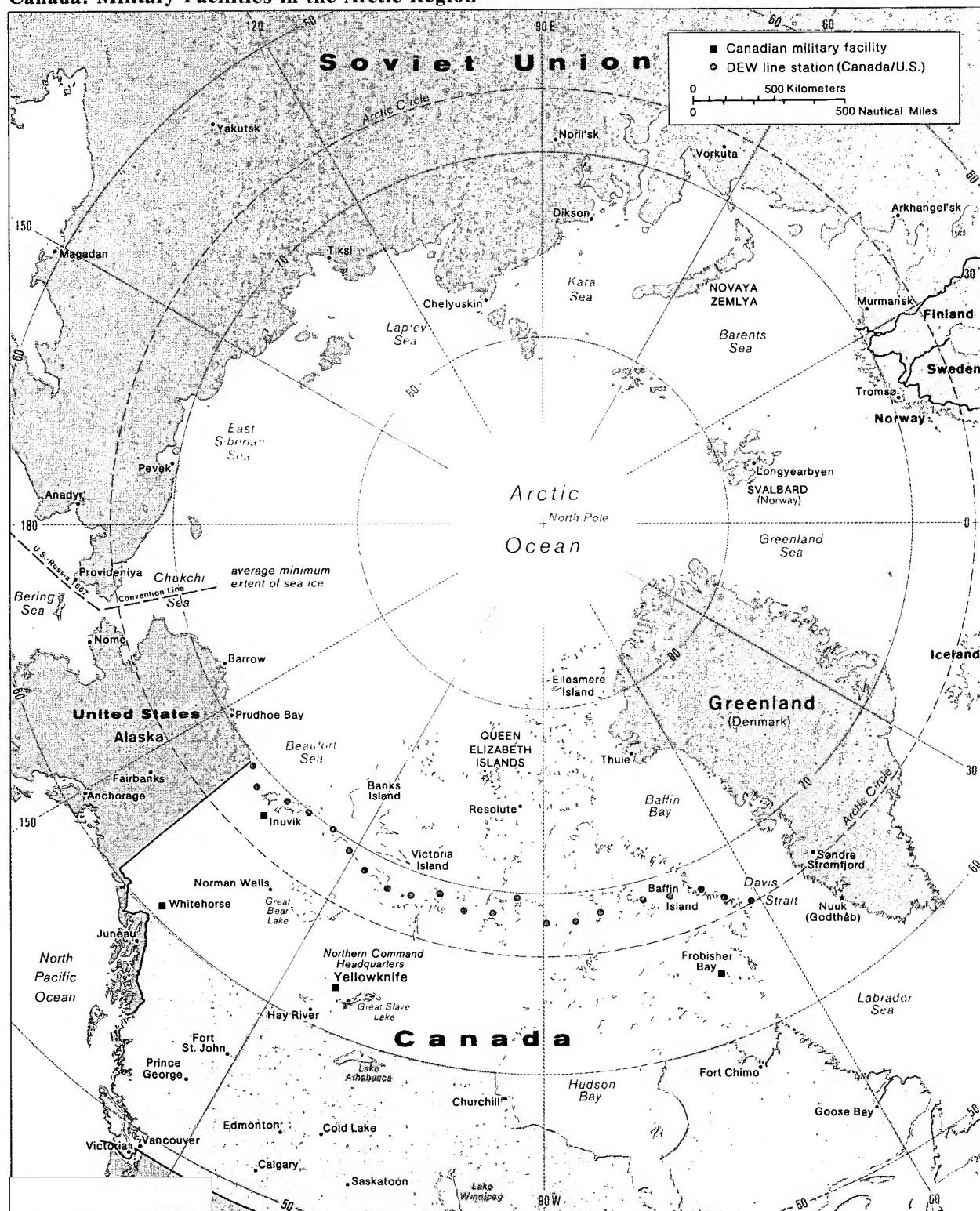
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**Figure 4**  
**Canada: Military Facilities in the Arctic Region**



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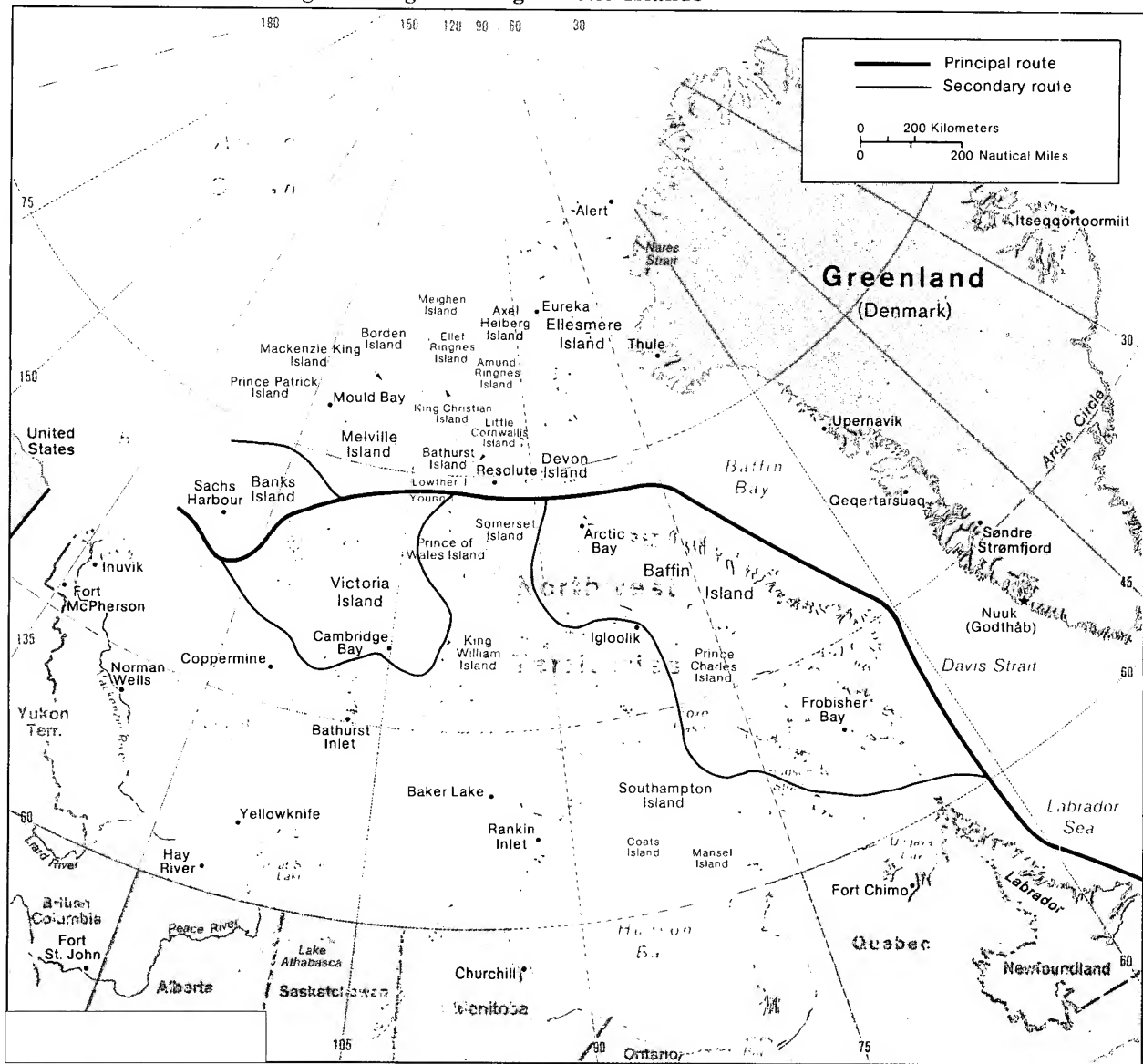
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**Figure 5**  
**Canada: Northwest Passage Through the High Arctic Islands**



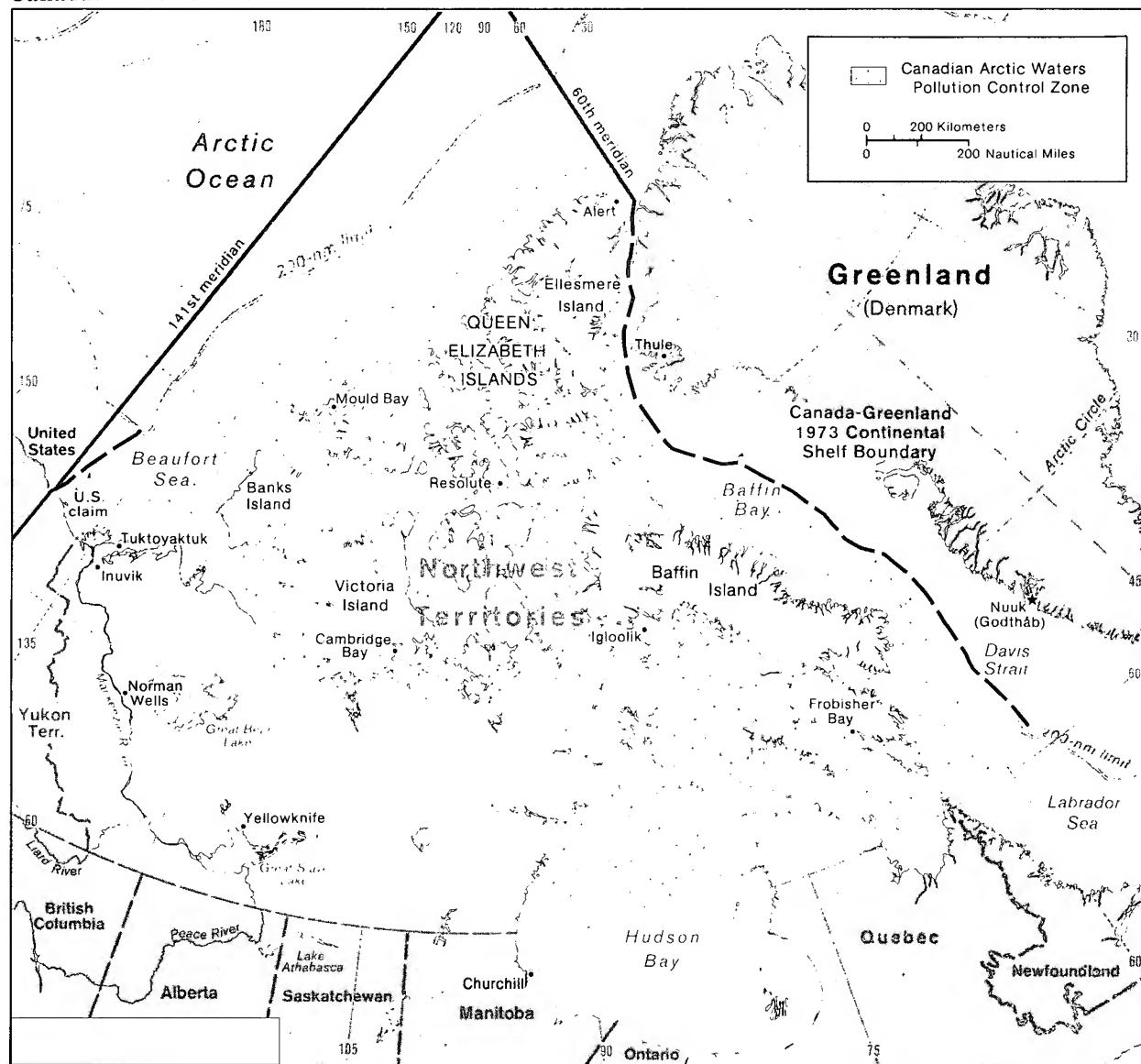
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Figure 6  
Canada: Jurisdictional Claims in the Arctic



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